

REMARKS

Prior to entry of this reply, claims 1, 2, 4-12 and 14-22 are currently pending in the subject application. Claims 1, 6, 11 and 16 are independent.

Applicants request, in the next Office action, that the Examiner indicate the acceptability of the drawings filed on December 31, 2003.

Claims 1-2, 4-12 and 14-22 are presented to the Examiner for further prosecution on the merits.

A. Introduction

In the outstanding Office Action Made Final, the Examiner rejected claims 6-10 and 16-22 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement; rejected claims 1-2, 4, 11-12 and 14 under 35 U.S.C. § 103(a) as being unpatentable over WO 00/00993 to Chen et al. ("the Chen et al. reference"); and rejected claims 5 and 15 under 35 U.S.C. § 103(a) as being unpatentable over the Chen et al. reference as applied to claims 1-2, 4, 11-12 and 14, and further in view of admitted prior art.

B. Asserted Rejection of Claims 6-10 and 16-22

In the outstanding Office Action Made Final, the Examiner rejected claims 6-10 and 16-22 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The "coextensive with the conductive metal tube" feature of independent claims 6 and 16 and dependent claims 21 and 22 was identified as forming the basis of the rejection. More particularly, page 2 of the Office action states that "It appears that the conductive metal strip is within the boundaries of the conductive metal tube but does not share the same boundaries as is required by the word "coextensive"."

Applicants respectfully submit that support for the “coextensive with the conductive metal tube” feature of claims 6, 16, 21 and 22 may be at least found in paragraph [0040] and FIG. 4 of applicants’ originally filed specification. For example, paragraph [0040] of applicant’s originally filed specification provides that in exemplary embodiments, such as the exemplary embodiment illustrated originally filed FIG. 4, turns, e.g., T₁, T₂, and T₃ may be formed of a conductive metal tube and a conductive metal strip. Referring to originally filed FIGS. 4 and 5, applicants’ originally filed specification clearly illustrates exemplary embodiments in which the conductive metal strip may coextend with the conductive metal tube. Further, as disclosed, e.g., in originally filed paragraph [0040], the metal tube and the metal strip may be firmly coupled via welding or brazing. Additionally, as disclosed in, e.g., originally filed paragraph [0049], by providing an antenna including a metal tube and a metal strip, the robustness and strength of the antenna may be improved such that the antenna may retain its shape without using an additional support or clamp. Accordingly, applicants submit that the originally filed specification clearly illustrates and describes the “coextensive with the metal tube” feature of independent claims 6 and 16. For at least these reasons, applicants submit that previously filed claims 6-10 and 16-22 comply with 35 U.S.C. § 112, first paragraph, and accordingly request withdrawal of the rejection.

Applicants further submit that claims 6-10 and 16-22 were not rejected based on prior art and thus, applicants submit that claims 6-10 and 16-22 are allowable.

C. Asserted Obviousness Rejection of Claims 1-2, 4, 11-12 and 14

In the outstanding Office Action Made Final, the Examiner rejected claims 1-2, 4, 11-12 and 14 under 35 U.S.C. § 103(a) as being unpatentable over the Chen et al. reference. The rejection is respectfully traversed for at least the following reasons.

The Examiner acknowledges, on page 3 of the Office action, that the Chen et al. reference does not disclose “a sum of lengths of the plurality of inner turns is longer than a length of the outermost turn” feature of independent claims 1 and 11. The Examiner further states that a *prima facie* case of obviousness exists when the only difference between the prior art and the claims is a relative dimension of the apparatus and an apparatus having the claimed dimensions would not perform differently than the prior art apparatus.

Even assuming that the only difference between the antenna embodiments of the Chen et al. reference and claims 1 and 11 is a relative dimension of the apparatus, it is respectfully submitted that the claimed relative dimension, i.e., a sum of lengths of the plurality of inner turns is longer than a length of the outermost turn, does result in an apparatus that performs differently. Thus, a *prima facie* case of obviousness cannot exist. As further evidence supporting the following argument, enclosed is a Declaration by Mr. Yury Nikolaevich Tolmachev, a named inventor in the subject application, and an employee of Samsung Electronics Co., Ltd. (See the Declaration at paragraphs 2 and 3). Mr. Yury Nikolaevich Tolmachev has 6 years of experience in the art of inductively coupled antennas. (See the Declaration at paragraph 6). It is his opinion that one of ordinary skill in the art of inductively coupled plasma processing devices would have a scientific degree and at least two years of experience in the design and/or fabrication of inductively coupled plasma processing devices. (See the Declaration at paragraph 7). Accordingly, it is respectfully submitted that Mr. Yury Nikolaevich Tolmachev is at least one of ordinary skill in the art of inductively coupled plasma processing devices.

By having a sum of lengths of the plurality of inner turns be longer than a length of the outermost turn, the total impedance of the inner turns may be larger than an impedance of the

outer terminal. Thus, in an antenna respectively including the features recited in each of claims 1 and 11, a larger current flows through the outermost turn than the inner turns (See the Declaration at paragraph 10). In contrast, in the Chen et al. reference, tuning capacitors are used to adjust the current in the outer coil to be larger than that in the inner coil. Further, the Chen et al. reference teaches that while the inner coil typically has a shorter electrical length than the outer coil, a greater degree of current adjustment may be realized when the electrical length of the coils are substantially similar (See the Declaration at paragraph 8).

For at least these reasons, applicants submit that the Chen et al. reference does not suggest, much less disclose, the combination of features recited in each of independent claims 1 and 11, as well as all the features of claims 2, 4, 12 and 14, which directly or indirectly depend from one of claims 1 and 11. It is respectfully requested that the rejection be withdrawn.

D. Asserted Obviousness Rejection of Claims 5 and 15

In the outstanding Office Action Made Final, the Examiner rejected claims 5 and 15 under 35 U.S.C. § 103(a) as being unpatentable over the Chen et al. reference as applied to claims 1-2, 4, 11-12 and 14, and further in view of allegedly admitted prior art of an antenna with a plurality of turns that is formed of a single conductive line. The rejection is respectfully traversed for at least the following reasons.

As discussed above with regard to independent claims 1 and 11, from which claims 5 and 15 respectively depend, the Chen et al. reference fails to suggest, much less disclose, the combination of features recited in each of claims 1 and 11. Applicants submit that the allegedly admitted prior art of an antenna with a plurality of turns that is formed of a single conductive line does not overcome the deficiencies of the Chen et al. reference, as applied to claims 1 and 11 (See the Declaration at paragraph 13). For at least these reasons, applicants submit that the Chen

et al. reference and the allegedly admitted prior art does not disclose or suggest the combination of features recited in claims 5 and 15. It is respectfully requested that the rejection be withdrawn.

E. Conclusion

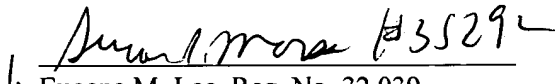
If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

LEE & MORSE, P.C.

Date: November 16, 2006


Eugene M. Lee, Reg. No. 32,039

Attachement:

Declaration Under 37 C.F.R. § 1.132

LEE & MORSE, P.C.
1101 WILSON BOULEVARD, SUITE 2000
ARLINGTON, VA 22209
703.525.0978 TEL
703.525.4265 FAX

PETITION and
DEPOSIT ACCOUNT CHARGE AUTHORIZATION

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.